

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
11 November 2004 (11.11.2004)

PCT

(10) International Publication Number  
**WO 2004/096148 A2**

(51) International Patent Classification<sup>7</sup>: **A61K**  
(21) International Application Number:  
PCT/US2004/013099  
(22) International Filing Date: 26 April 2004 (26.04.2004)  
(25) Filing Language: English  
(26) Publication Language: English  
(30) Priority Data:  
60/465,891 25 April 2003 (25.04.2003) US  
10/676,694 30 September 2003 (30.09.2003) US

(71) Applicant (for all designated States except US): **THE KENNETH S. WARREN INSTITUTE, INC.** [US/US];  
712 Kitchawan Road, Ossining, NY 10562 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **BRINES, Michael** [US/US]; 1 Wepawaug Road, Woodbridge, CT 06525 (US). **CERAMI, Anthony** [US/US]; 49 Bramblebush Drive, Croton-on-Hudson, NY 10520 (US). **GHEZZI, Pietro** [IT/IT]; Via Mac Mahon No. 82, I-20155 Milan (IT). **FIORDALISO, Fabio** [IT/IT]; Via Lorenzo di Credi 10, I-20149 Milan (IT). **FRATELLI, Maddalena** [IT/IT];

Via Costanza 4, I-20146 Milan (IT). **LEIST, Marcel** [DK/DK]; Kloverbladsgade 14.1, DK-2500 Valby (DK). **NIELSEN, Mette** [DK/DK]; Gladsaxevej 73.3. th, DK-2860 Soborg (DK). **SAGER, Thomas** [DK/DK]; Stormosevej 35, DK-2765 Smorum (DK). **PEDERSEN, Lars, Ostergaard** [DK/DK]; Ved Vigen 14, DK-2400 Copenhagen (DK). **GERWIEN, Jens** [DK/DK]; Haraldsgade 52, 1.tv, DK-2100 Copenhagen (DK). **COLEMAN, Thomas** [US/US]; 20 Emery Street, Mt. Kisco, NY 10549 (US).

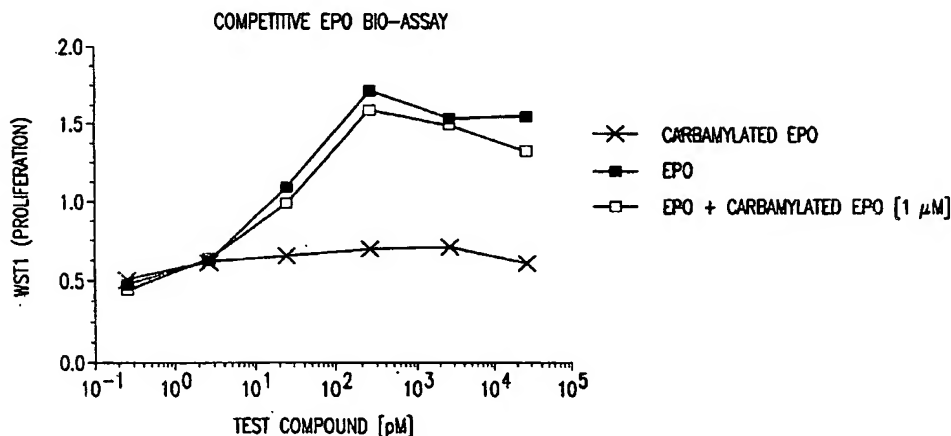
(74) Agents: **CORUZZI, Laura, A.** et al.; Jones Day, 222 East 41st Street, New York, NY 10017-6702 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,

[Continued on next page]

(54) Title: TISSUE PROTECTIVE CYTOKINE RECEPTOR COMPLEX, ASSAYS FOR IDENTIFYING TISSUE PROTECTIVE COMPOUNDS AND USES THEREOF



(57) Abstract: The present invention is directed methods for identifying compounds that have a tissue protective activity using a heteromultimer receptor complex that mediates the tissue protective activities. The complex consists of at least one EPO-R in complex with at least one  $\beta$ c Receptor. These compounds used in the assays to identify tissue protective compounds include, but are not limited to, small molecules and biologics. The compounds identified using these assays can be used to treat or prevent various diseases, disorders, or conditions of the central and peripheral nervous systems as well as those of other erythropoietin-responsive or excitable cells, tissues, and organs.

WO 2004/096148 A2



ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,  
FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,  
SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,  
GW, ML, MR, NE, SN, TD, TG).

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

**Published:**

- *without international search report and to be republished upon receipt of that report*